



SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: FitzGerald, David
Pastan, Ira
Mansfield, Elizabeth
Kreitman, Robert
- (ii) TITLE OF INVENTION: Recombinant Antibodies and
Immunoconjugates Targeted to CD-22 Bearing Cells and
Tumors
- (iii) NUMBER OF SEQUENCES: 15
- (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRESSEE: Townsend and Townsend and Crew LLP
 - (B) STREET: Two Embarcadero Center, Eighth Floor
 - (C) CITY: San Francisco
 - (D) STATE: California
 - (E) COUNTRY: USA
 - (F) ZIP: 94111-3834
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 09/381,497
 - (B) FILING DATE: 20-SEP-1999
 - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: WO PCT/US98/05453
 - (B) FILING DATE: 19-MAR-1998
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 60/041,437
 - (B) FILING DATE: 20-MAR-1997
- (viii) ATTORNEY/AGENT INFORMATION:
 - (A) NAME: Weber, Ellen Lauver
 - (B) REGISTRATION NUMBER: 32,762
 - (C) REFERENCE/DOCKET NUMBER: 015280-317100US
- (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: (415) 576-0200
 - (B) TELEFAX: (415) 576-0300

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 369 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 1..369

(D) OTHER INFORMATION: /product= "RFB4 heavy chain"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GAA GTG CAG CTG GTG GAG TCT GGG GGA GGC TTA GTG AAG CCT GGA GGG	48
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly	
1 5 10 15	
TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC GCT TTC AGT ATC TAT	96
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr	
20 25 30	
GAC ATG TCT TGG GTT CGC CAG ACT CCG GAG AAG AGG CTG GAG TGG GTC	144
Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val	
35 40 45	
GCA TAC ATT AGT AGT GGT GGT GGT ACC ACC TAC TAT CCA GAC ACT GTG	192
Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val	
50 55 60	
AAG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC AAG AAC ACC CTG TAC	240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr	
65 70 75 80	
CTG CAA ATG AGC AGT CTG AAG TCT GAG GAC ACA GCC ATG TAT TAC TGT	288
Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys	
85 90 95	
GCA AGA CAT AGT GGC TAC GGT AGT AGC TAC GGG GTT TTG TTT GCT TAC	336
Ala Arg His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr	
100 105 110	
TGG GGC CAA GGG ACT CTG GTC ACT GTC TCT GCA	369
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala	
115 120	

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 123 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly	
1 5 10 15	
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr	
20 25 30	

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 321 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ix) FEATURE:

- (A) NAME/KEY: CDS
(B) LOCATION: 1..321
(D) OTHER INFORMATION: /product= "RFB4 light chain"

GAT Asp 1	ATC Ile	CAG Gln	ATG Met	ACC Thr 5	CAG Gln	ACT Thr	ACA Thr	TCC Ser	TCC Ser 10	CTG Leu	TCT Ser	GCC Ala	TCT Ser	CTG Leu 15	GGA Gly	48
GAC Asp	AGA Arg	GTC Val	ACC Thr 20	ATT Ile	AGT Ser	TGC Cys	AGG Arg	GCA Ala 25	AGT Ser	CAG Gln	GAC Asp	ATT Ile 30	AGC Ser	AAT Asn	TAT Tyr	96
TTA Leu	AAC Asn	TGG Trp 35	TAT Tyr	CAG Gln	CAG Gln	AAA Lys	CCA Pro 40	GAT Asp	GGA Gly	ACT Thr	GTT Val	AAA Lys 45	CTC Leu	CTG Leu	ATC Ile	144
TAC Tyr 50	TAC Tyr	ACA Thr	TCA Ser	ATA Ile	TTA Leu	CAC His 55	TCA Ser	GGA Gly	GTC Val	CCA Pro 60	TCA Ser	AGG Arg	TTC Phe	AGT Ser	GGC Gly	192
AGT Ser 65	GGG Gly	TCT Ser	GGA Gly	ACA Thr	GAT Asp 70	TAT Tyr	TCT Ser	CTC Leu	ACC Thr 75	ATT Ile	AGC Ser	AAC Asn	CTG Leu	GAG Glu	CAA Gln 80	240
GAA Glu	GAT Asp	TTT Phe	GCC Ala	ACT Thr 85	TAC Tyr	TTT Phe	TGC Cys	CAA Gln 90	CAG Gln	GGT Gly	AAT Asn	ACG Thr	CTT Leu	CCG Pro 95	TGG Trp	288

ACG TTC GGT GGA GGC ACC AAG CTG GAA ATC AAA
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

321

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 107 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15
 Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
 35 40 45
 Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Gly Gly Gly Ser
 1

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..33
- (D) OTHER INFORMATION: /note= "RFB4 VH5 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GGACCTCATA TGGAAGTGCA GCTGGTGGAG TCT

33

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..24
- (D) OTHER INFORMATION: /note= "gamma-CH1 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

AGCAGATCCA GGGGCCAGTG GATA

24

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 54 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..54
- (D) OTHER INFORMATION: /note= "RFB4 VH3 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

AGATCCGCCA CCACCGGATC CGCCTCCGCC TGCAGAGACA GTGACCAGAG TCCC

54

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..27
- (D) OTHER INFORMATION: /note= "RFB4 VH3 dsFv heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CCGGAAGCTT TTGCAGAGAC AGTGACC

27

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..28
- (D) OTHER INFORMATION: /note= "RFB4 VH dsFv(cys) heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GACCCACTCC AGGCACTTCT CCGGAGTC

28

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..48

(D) OTHER INFORMATION: /note= "RFB4 VL5 light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GGTGGCGGAT CTGGAGGTGG CGGAAGCGAT ATCCAGATGA CACAGACT

48

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..24
- (D) OTHER INFORMATION: /note= "C-kappa light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

TGGTGGGAAG ATGGATACAG TTGG

24

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..25
- (D) OTHER INFORMATION: /note= "RFB4 VL3 light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CCGGAAGCTT TGATTTCAG CTTGG

25

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..28
- (D) OTHER INFORMATION: /note= "RFB4 VL5 dsFv light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGACCTCATA TGGATATCCA GATGACCC

28

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..48
- (D) OTHER INFORMATION: /note= "RFB4 VL3 dsFv light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCGGAATTCA TTATTTGATT TCCAGCTTGG TGCCGCAACC GAACGTCC

48